



INTERNATIONAL UNION OF
PURE AND APPLIED CHEMISTRY

Advancing Chemistry Worldwide

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For release 31 May 2012

Element 114 is Named Flerovium and Element 116 is Named Livermorium

IUPAC has officially approved the name flerovium, with symbol Fl, for the element of atomic number 114 and the name livermorium, with symbol Lv, for the element of atomic number 116. Priority for the discovery of these elements was assigned, in accordance with the agreed criteria, to the collaboration between the Joint Institute for Nuclear Research (Dubna, Russia) and the Lawrence Livermore National Laboratory (Livermore, California, USA). The collaborating team has proposed the names flerovium and livermorium which have now been formally approved by IUPAC.

For the element with atomic number 114 the discoverers proposed the name flerovium and the symbol Fl. This proposal lies within tradition and will honor the Flerov Laboratory of Nuclear Reactions where superheavy elements are synthesised. Georgiy N. Flerov (1913 – 1990) – was a renowned physicist, author of the discovery of the spontaneous fission of uranium (1940, with Konstantin A. Petrzhak), pioneer in heavy-ion physics, and founder in the Joint Institute for Nuclear Research the Laboratory of Nuclear Reactions (1957). It is an especially appropriate choice because, since 1991 this laboratory in which the element was synthesized, has borne his name. Professor G.N. Flerov is known also for his fundamental work in various fields of physics that resulted in the discovery of new phenomena in properties and interactions of the atomic nuclei; these have played a key role in the establishment and development of many areas of further research.

For the element with atomic number 116 the name proposed is livermorium with the symbol Lv. This is again in line with tradition and honors the Lawrence Livermore National Laboratory (1952). A group of researchers of this Laboratory with the heavy element research group of the Flerov Laboratory of Nuclear Reactions took part in the work carried out in Dubna on the synthesis of superheavy elements including element 116. Over the years scientists at Livermore have been involved in many areas of nuclear science: the investigation of fission properties of the heaviest elements, including the discovery of bimodal fission, and the study of prompt gamma-rays emitted from fission fragments following fission, the investigation of isomers and isomeric levels in many nuclei and the investigation of the chemical properties of the heaviest elements.

The Recommendations will be published in the July issue of the IUPAC journal *Pure and Applied Chemistry* which is available online at *Pure Appl. Chem.*, 2012, Vol. 84, No. 7 (doi: 10.1351/PAC-REC-11-12-03). Priority of claims to the discovery of the elements of atomic numbers 114 and 116 was determined by a Joint Working Party of independent experts drawn from the International Union of Pure and Applied Chemistry (IUPAC) and the International Union of Pure and Applied Physics (IUPAP). The group's report was published in July 2011, *Pure and Appl. Chem.*, 2011, Vol. 83, No. 7, pp 1485-1498 (doi: 10.1351/PAC-REP-10-05-01). A new Joint Working Party, appointed by the Presidents of IUPAC and IUPAP has begun work to assign priority for the discovery of elements 113, 115, 117, 118 and heavier elements, for which claims may be submitted.

IUPAC was formed in 1919 by chemists from industry and academia. For more than 90 years, the Union has succeeded in fostering worldwide communications in the chemical sciences and in uniting academic, industrial and public sector chemistry in a common language. IUPAC is recognized as the world authority on chemical nomenclature, terminology, standardized methods for measurement, atomic weights and many other critically evaluated data. More information about IUPAC and its activities is available at www.iupac.org.

For questions, contact Dr. Terrence Renner, Executive Director, at secretariat@iupac.org.